



SROI Study for Soil and Water Conservation Initiatives in Andhra Pradesh, Rajasthan, Tamil Nadu, and Uttar Pradesh, 2023

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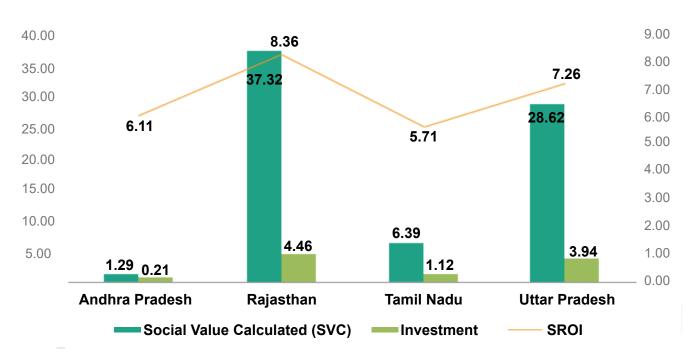
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## **OVERVIEW**

The SROI report presents a comprehensive analysis of the Soil and Water Conservation Initiatives carried out by the Dalmia Bharat Foundation (DBF) across Andhra Pradesh, Rajasthan, Tamil Nadu, and Uttar Pradesh from 2021 to 2023. In 2023, the CII Centre of Excellence for Sustainable Development (CESD) conducted a Social Return on Investment (SROI) study to assess the social value generated by these initiatives for both direct and indirect stakeholders. The retrospective analysis aims to provide DBF with insights into the social returns on their investments and to identify opportunities for enhancing the project impacts.

Key impacts of the DBF Initiatives include the replenishment of aquifers leading to increased water tables, adoption of double cropping, expansion of livestock, efficient water usage, and farmer capacity building in rainwater harvesting techniques. DBF has contributed to economic growth with a focus on social inclusion, significantly enhancing crop area and farmers' incomes in project villages.

The overall social value of the Soil and Water Conservation Initiatives is calculated at 7.56, indicating that every rupee invested has generated approximately eight rupees in social value. Over the past three years, DBF has invested Rs 9.73 crore in these initiatives across Andhra Pradesh, Rajasthan, Tamil Nadu, and Uttar Pradesh, resulting in a total social value of Rs 73.64 crore for beneficiaries. Collaboration with NABARD, community engagement, and proactive implementation have been instrumental in the success of these initiatives.



SVC, DBF's Investment and SROI (In cr)

**The Social Value UK methodology¹** and the seven principles of SROI were applied to calculate the social value of initiatives in four states. The role of NABARD, Agriculture, Horticulture, Livestock, and other government organisations in social value creation was considered through deadweight and attribution in the SROI analysis to prevent any overclaim in project outcomes.

<sup>1.</sup> https://socialvalueuk.org/

#### **Andhra Pradesh**

#### **Key Achievements**







In Kadapa, Andhra Pradesh, total 208 water structures were constructed by the organisation and recharged 6.37 lakh KL water<sup>2</sup> in the initiative areas. It has partnered with NABARD and constructed borewell recharge shafts and check dams. The initiative has impacted 5,245 households in Kadapa. The key impacts of the initiative are groundwater recharge, increase in farm income, change in cropping pattern, monocropping to multicropping and awareness on water conservation.

The SROI value of the Soil and Water Conservation Initiative in Andhra Pradesh is 6.11 on the investment of rupee one. The investment of Rs 21.19 lakh brought in social value of Rs 1.29 crore. There is a 2 percent Social value created (SVC) against the investment of 2 percent of the total investments.

### Rajasthan

#### **Key Achievements**







In Chirawa, the organisation has constructed rainwater harvesting tanks, recharge wells, ponds, toilets, plantation and pizometer installation. Total 893 water structures and 439 toilets were constructed by the organisation. 690 lakh cubic meter water was harvested through construction of various water structures in the initiative areas. Water harvested through rainwater harvesting tanks is used for drinking, cooking, animals, kitchen garden etc.

The SROI value of the Soil and Water Conservation Initiative in Rajasthan is 8.36. The investment of Rs 4.46 crore by DBF generated a social value of Rs 37.32 crore. There is a 50 percent SVC value against the investment of 46 percent of the total investments.

#### **Tamil Nadu**

#### **Key Achievements**







Total water harvested/recharged in Dalmiapuram and Ariyalur was 97.16 Lakh KL and total water structures constructed were 176 by DBF³ in the last three years in Tamil Nadu. The initiative has impacted 12,900 farmers in the last three years. The organisation also constructed check dams with the support of NABARD in Tamil Nadu. NABARD invested Rs 17.23 lakh in the watershed development initiatives in the state.

The SROI of the initiative is measured as 5.71. The investment of Rs 1.12 crore brought in social value of Rs 6.39 crore in three years. There is a 9 percent SVC value against the investment of 12 percent of the total investments.

#### **Uttar Pradesh**

#### **Key Achievements**



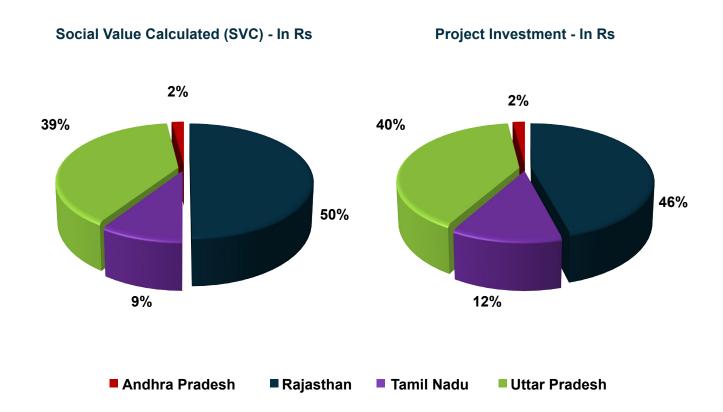




92 lakh KL water was harvested by 5,076 water structure in 3 locations (Ramgarh, Jawaharpur and Nigohi). It has impacted 47,445 farmers and enhanced crop productivity and farm income. The impacts groundwater are recharge, availability of quality drinking water for households, increase in productivity and income enhancement, reduction in vector borne diseases and alternate sources of livelihood generation such as vermicompost pits, water chestnut cultivation and pisciculture.

The SROI value of the initiative in Uttar Pradesh is 7.26. An investment of Rs 3.94 crore brought in social value of Rs 28.62 crore for the beneficiaries. It is the second highest social value created across all four locations after Rajasthan. There is a 39 percent SVC against the investment of 40 percent of the total investments.

The highest investment by DBF on initiatives were in Rajasthan (Rs 4.46 crore), followed by Uttar Pradesh (Rs 3.94 crore), Tamil Nadu (Rs 1.12 crore), and Andhra Pradesh (Rs 21 lakh). The initiative in Rajasthan generated the highest social value at 50%, followed by 39% in Uttar Pradesh, 9% in Tamil Nadu, and 2% in Andhra Pradesh.



#### **Community Contribution**

The community contributed 8-16% of the project investment as 'Shramdaan' for soil and water initiatives. This involvement fostered a sense of ownership and promoted long-term sustainability and resilience within the communities.

The collective community contribution towards Soil and Water Conservation initiatives across four locations amounts to Rs 3,51,17,054, while NABARD's contribution stands at Rs 49,18,741 in Andhra Pradesh and Tamil Nadu combined. The total depreciation value of water structures and activities was measured as Rs 2,69,54,632 in four locations.

#### INITIATIVE IMPACTS AND SOCIAL VALUE CREATED

This section highlights the key impacts of the initiatives, as well as the significance of collaboration, partnerships, and community involvement. It was noted that beneficiaries contributed 8-16% of the initiative's investment, both in cash and in kind, towards various activities. DBF collaborated with NABARD in Andhra Pradesh and Tamil Nadu, with NABARD offering technical and financial assistance to the initiatives.

#### **Andhra Pradesh**

- SROI Value 6.11
- Investment Rs 21.19 lakh, Social Value Created Rs 1.29 crore
- Community Contribution/Shramdaan Rs 1.70 lakh
- NABARD: Rs 31.95 lakh

#### **Impact**

In Kadapa, Andhra Pradesh, the initiative has promoted village ponds, farm ponds, check dam causeways, borewell recharge structures, and micro irrigation. 4 Watershed Development Committees were constituted by DBF. Total 208 water structures were constructed by **the organisation and recharged 6.37 lakh KL water in the project areas**. It has partnered with NABARD and constructed borewell recharge shafts and check dams. NABARD has invested Rs 31.95 lakh on the Initiatives in last three years. **The initiative has impacted 5,245 house-holds in Kadapa**. The key impacts of the initiative are groundwater recharge, increase in farm income, reduced agriculture input cost, access to credit, change in cropping pattern, dairy development, monocropping to multicropping and awareness sessions on water conservation.

Description	Nos
Total water structures constructed	208
Total water harvested/recharged	6.37 Lakh KL
Total beneficiaries	5,245

### Rajasthan

- SROI Value 8.36
- Investment Rs 4.46 crore, Social Value Created Rs 37.32 crore
- Community Contribution Rs 3 crore

#### **Impact**

In Chirawa, the organisation has constructed rainwater harvesting tanks, recharge wells, ponds, toilets, plantation and pizometer installation. Total 893 water structures and 439 toilets were constructed by the organisation. 690 lakh cubic meter water was harvested through construction of various water structures in the initiative areas. Water harvested through rainwater harvesting tanks is used for drinking, cooking, animals, kitchen garden etc. Toilet construction improved sanitation and hygiene practices in villages and provided privacy, safety, and convenience to households. It has also reduced the water borne diseases in the Initiatives villages. The initiative has increased farmers income and yield, improved crop productivity and promoted horticulture. The organisation promoted Kund Baghwani, for BPL families/wage labours and provided package of seasonal vegetables seed and fruit plants. 425 fruit orchards were set up by the organisation. It promoted citrus fruits such as karonda, lemon, kinnow, sweet lime and other fruit such as bel, ber etc. There is no income from fruit orchard produce yet as plants are small. 1 Village Development Committee with 11 members was formed by DBF to raise awareness on water and agriculture amongst farmers in the Initiatives areas.

Integrated farming system was promoted by the organisation, and it increased cropping area in the initiative villages. The organisation conducted 588 trainings for farmers on agriculture, water awareness (rainwater harvesting, uses & importance, aquifers management & importance etc), animal husbandry and social awareness trainings. The trainings benefitted 13,905 farmers in the last three years.

Description	Nos
Total water structures and toilets constructed	893 and 439
Total water harvested/recharged	690 Lakh m3
Total beneficiaries	1,950

#### **Tamil Nadu**

- SROI Value 5.71
- Investment Rs 1.12 crore, Social Value Created Rs 6.39 crore
- Community Contribution/Shramdaan Rs 17.92 lakh

#### **Impact**

In Dalmiapuram and Ariyalur, the organisation has promoted village ponds, farm ponds, check dams, rooftop rainwater harvesting, borewell recharge shafts, and micro irrigation systems. 90 Lakh KL groundwater was recharged, and 165 water structures were constructed by the organisation in Dalmiapuram. In Ariyalur, 7.16 Lakh KL groundwater recharged, and 11 water structures were created. **Total water harvested/recharged in both the locations was 97.16 Lakh KL and total water structures were 176 by DBF** in the last three years in Tamil Nadu. 2 Village Development Committees were formed by DBF. The initiative has impacted 12,900 farmers in the last three years. The organisation also constructed check dams with the support of NABARD in Tamil Nadu. NABARD invested Rs 17.23 lakh in the watershed development initiatives in the state.

Description	Nos
Total water structures constructed (Dalmiapuram and Ariyalur)	176
Total water harvested/recharged	97.16 Lakh KL
Total beneficiaries	12,900

#### **Uttar Pradesh**

- SROI Value 7.26
- Investment Rs 3.94 crore, Social Value Created Rs 28.62 crore
- Community Contribution/Shramdaan Rs 31.54 lakh

#### **Impact**

The initiative was implemented in Ramgarh, Jawaharpur and Nigohi blocks of Uttar Pradesh. The organisation promoted village ponds, borewell recharge structures, rooftop rainwater harvesting, borewell recharge shaft, sprinklers, and trash Mulching. The initiative raised awareness on vermicompost, and farmyard manure. Awareness trainings were conducted for farmers on health, hygiene, agriculture and water conservation. There was no formation of Village Development Committee or Water User Group in the initiative locations by DBF. 92 lakh KL water was harvested by 5076 water structure in 3 Initiatives locations. It has impacted 47,445 farmers and enhanced crop productivity and farm income. The key impacts are groundwater recharge, availability of quality drinking water for households, increase in crop productivity and income enhancement, reduction in vector borne diseases and alternate sources of livelihood generation – vermicompost pits, water chestnut cultivation and pisciculture.

Description	Nos
Total water structures constructed (Ramgarh, Jawaharpur and Nigohi)	5,076
Total water harvested/recharged	92 Lakh KL
Total beneficiaries	47,445

#### Income from Livelihood Activities

S No.	Activities	Units	Size	No. of HHs	Income (In lakh)⁴
1	Vermicompost	2600	5x3x1 Cubic feet	2515	553.3
2	Pisciculture	3	1 Acre approx.	3	42.5
3	Water Chestnuts Cultivation	6 ponds	1 Acre approx	24	10.45
Total				606.25	

#### **PROCESS**

#### Social Return on Investment (SROI)

SROI study is undertaken to understand and measure the social value of Soil and Water Conservation initiatives implemented by DBF in Andhra Pradesh, Rajasthan, Tamil Nadu and Uttar Pradesh. The initiatives have been implemented by DBF, social arm of Dalmia Bharat Limited. Some of the project activities have been implemented in collaboration with government departments such as NABARD, Agriculture and Horticulture Department to get technical assistance, mobilise existing resources and ensure the fastest delivery of services in rural areas. The SROI study would enable DBF to recognise the potential of the Soil and Water Conservation initiatives, shaping their perspective for decision-making. This insight may facilitate resource reallocation, reducing both risk and costs.

SROI is an approach for understanding and managing the value of social, economic, and environmental outcomes created by Soil and Water Conservation Initiatives. SROI is an estimate of social return or social value created for every rupee spent. SROI measures the impact of the initiatives in monetary terms by assigning a financial proxy to it and considering the contribution of other organisations such as NABARD, Agriculture, Livestock, and Irrigation Departments, and other government departments in the process of change.

SROI is the total social value created by DBF initiatives outcomes divided by the investment of DBF on the Soil and Water Conservation Initiatives.

<sup>4.</sup> Data provided by the organisation

#### SROI Ratio = Social Value Created (SVC)/Total investments

Social value created (SVC) is the sum of the monetised impacts created by DBF initiatives. Investments are the total financial value of the amount that DBF has invested in the initiative in the last three years (2021-2023).

#### **Retrospective SROI**

This SROI study is retrospective in nature as it is conducted for the Soil and Water Conservation initiatives implemented between 2021-2023. It is based on actual outcomes of the initiatives. The key outcomes of the initiative have been selected post discussion with beneficiaries, DBF and secondary stakeholders. The data for the study was shared by DBF and it was validated by CII CESD team with primary and secondary stakeholders of the initiatives during site visit in project locations.

#### SROI is based on seven principles<sup>5</sup>

0	Involve stakeholders
0	Understand what changes
0	Value the things that matter
0	Only include what is material
0	Do not over-claim
0	Be transparent
0	Verify the result

#### Study Methodology

One of the key steps during social value measurement was the development of a Theory of Change (ToC) for material outcomes. ToC conveyed the activities implemented by DBF, their intended and unintended outcomes, challenges and risks, engagement, and contribution of direct stakeholders in terms of time and money and contribution of other organisations in the process of change in project villages.

The following steps were followed to calculate the SROI of Soil and Water Conservation initiatives in four locations of DBF. The study was started with a data review of Soil and Water Conservative initiative documents provided by ABF. Virtual discussions were conducted with DBF team to understand the project objectives and their outcomes and overall implementation approach, and challenges faced during project execution. After discussion with the organisation, customised questionnaires based on activities were developed to gather and validate data from beneficiaries and other key stakeholders.

12 FGDs (182 members) were conducted with beneficiaries and 182 one-to-one interactions (survey) were conducted with secondary stakeholders to understand the impact of the initiatives. A few more rounds of online discussion conducted with DBF teams in 2 locations to fill the data gaps. Post data collection, six steps were followed to arrive at the overall SROI value of the Soil and Water Conservation initiatives and individual location wise social values. The details of the steps are mentioned below:

#### STUDY FINDINGS



#### Stage 1: Establishing Scope and Identifying Stakeholders

#### Establishing Scope

DBF had implemented Soil and Water Conservation initiatives in Andhra Pradesh, Rajasthan, Tamil Nadu and Uttar Pradesh since 2013 in surrounding villages. The scope of the SROI study is to measure the social value of the initiatives implemented between 2021-23 in core villages. Outcomes and DBF investments of only the last three years are undertaken to calculate the social value of the initiatives. DBF has provided the data of number of beneficiaries, initiative activities, sub-activities, input value, and output data.

#### The study is a retrospective analysis.

#### Identifying Stakeholders

The initiative has engaged various stakeholders from farmers to government departments from planning to the evaluation stage. After understanding the initiatives, and interacting with beneficiaries and DBF team, the key stakeholders of the initiatives were identified. The initial discussion with DBF team helped to identify primary and secondary stakeholders of the initiatives in 4 locations. Only direct beneficiaries such as farmers, Village Development Committees (VDC), Farmer Groups, SHGs etc. and some of secondary stakeholders such as NABARD and Government Departments (Agriculture, Livestock & Irrigation) were considered for social value calculation and directly included in the SROI analysis. These stakeholders were engaged through FGDs and one-to-one interactions.

The details are mentioned below.

Andhra Pradesh	Primary Stakeholders	Farmers, Dairy farmers, Rural Community and Village Development Committees
Allullia Flauesii	Secondary Stakeholders	NABARD, Agriculture Department, Water Resources Department, Horticulture Depart- ment, Livestock Development and PRIs

Rajasthan	Primary Stakeholders	Farmers, Rural Community and Village Development Committee
	Secondary Stakeholders	Agriculture Department, Water Resources Department, Horticulture Department and PRIs
	Primary Stakeholders	Farmers, Rural Community, Farmer Groups and Village Development Committees
Tamil Nadu	Secondary Stakeholders	PWD, NABARD, Agriculture Department, Water Resources Department, Horticulture Department and PRIs
	Primary Stakeholders	Farmers and Rural Community
Uttar Pradesh	Secondary Stakeholders	Agriculture Department, Water Resources Department, Horticulture Department and PRIs

#### Determining which Stakeholders to Include

Various direct and indirect stakeholders have influenced the outcomes and played a key role in the success of the Soil and Water Conservation initiatives. For example, in the four locations, farmers, rural community and VDCs were identified as key stakeholders of the initiatives. SROI is calculated for primary beneficiaries only considering the objectives and material changes they have gone through. Secondary stakeholders such as Agriculture and Horticulture Department, Water Resources Department and NABARD are also included in the SROI analysis as they have provided technical assistance and finance for the watershed activities.

#### **Methods of Engagement:**

The primary and secondary stakeholders were engaged through focus group discussions and one-to-one interviews in all 4 locations. The team conducted virtual discussions in Rajasthan and Andhra Pradesh to validate the outcomes and collected data through one-to-one interactions and FGDs and recorded them for future reference. In Tamil Nadu and Uttar Pradesh, team collected on-site data through one-to-one interactions and FGDs. Team also interacted with PWD in Dalmiapuram, Tamil Nadu and Land Conservation Officer, Sitapur, Uttar Pradesh to understand the outcomes, challenges, and opportunities to further enhance the initiatives. Various rounds of interaction took place with DBF and stakeholders to collect data, validate impacts and gauge the social value.



#### **Stage 2: Mapping Outcomes**

After setting the scope of the study and stakeholder selection, in this stage, inputs, outputs, and key outcomes were mapped to calculate the social value in the value map. There were many initiative outcomes but only those outcomes which were experienced by most of the beneficiaries were undertaken for monetisation such as **income enhancement**, **improved crop productivity**, **groundwater recharge**, **increased crop area**, **awareness generation on water conservation**, **alternate livelihood opportunities etc.** ToC was developed for all four locations to show the relationship between inputs, outputs, and outcomes. The analysis reveals consistent outcomes across all locations, as the same initiative is being implemented in each of the four locations. ToC is a process to understand changes that stakeholders are going through, in the short and long term due to Initiatives intervention.

Stakeholders have spent time and money on the initiatives. Money spent by beneficiaries on initiatives was shared by DBF. There is an investment of Rs 3 crore by the beneficiaries in Rajasthan and Rs 1.70 lakh in Andhra Pradesh on Soil and Water Conservation initiative. Total Rs 49.18 lakh was invested by NABARD on the initiative in Andhra Pradesh and Tamil Nadu. The current convention in SROI is that the time spent by the beneficiaries on a programme is not given a financial value.<sup>6</sup>

#### **Contribution by Beneficiaries in Initiative Locations**

State	Beneficiary Contribution (In Rs)
Andhra Pradesh	1,69,526 (8% of the Initiatives cost)
Rajasthan	3,00,01,455
Tamil Nadu	17,92,033 (16% of the Initiatives cost)
Uttar Pradesh	31,54,040 (8% of the Initiatives cost)
Total	3,51,17,054

#### **Contribution by NABARD in Initiative Locations**

State	Beneficiary Contribution (In Rs)
Andhra Pradesh	31,94,819
Rajasthan	0
Tamil Nadu (Dalmiapuram)	17,23,922
Uttar Pradesh	0
Total	49,18,741

For each stakeholder, a quantity of stakeholders, inputs, outputs, and outcomes were mapped. The activities were considered as inputs, their, results were considered as outputs. For instance, check dam construction is an activity or input, the number of check dams constructed, no. of training sessions organised on water conservation, formation of the Village Development Committee etc. are considered as outputs. Some outputs had two or three outcomes, in such cases, all outcomes were recorded and monetised. For instance, the key outcome of DBF initiative is groundwater recharge, which lead to crop productivity and income enhancement, increase crop area, monocropping to multicropping and capacity building of farmers on water conservation.

Identified outcomes described the changes that result from activities after involving the key stakeholders. There are some common outcomes for all locations - groundwater recharge, increased availability of irrigation water, increased farm income, alternate livelihood opportunities, capacity building of farmers etc.

After discussing with stakeholders, the following outputs, outcomes, and impacts were mapped.

#### Andhra Pradesh

Stakeholders	Input	Output	Outcome	Impact
	Time and Money	208 water structures constructed by DBF -  Village ponds, farm ponds, check dam causeways, borewell recharge structures, micro irrigation/sprinklers, and watershed initiatives (NABARD supported initiatives)- 8 check dams were constructed (9-42 metres)	Access to loans Livelihood support Change in cropping pattern Monocropping to multicropping (Cotton to black gram and chilly) Reduced agriculture input cost Water saving due to use of sprinklers Increased cropping area due to availability of water Water storage, control run off, and accelerate recharging Dairy development in the Initiatives area	6.37 Lakh KL groundwater recharged through the water structures constructed by DBF  Increase in crop yield and income of farmers by 20%  Increase in yield of fruits and vegetables  Dairy development (Rs 12,000 increase in income per farmer p.a.)  Improved livelihood opportunities

Stakeholders	Input	Output	Outcome	Impact
Farmers	Time	60 trainings conducted for farmers	Awareness about water conservation, micro irrigation, livestock and social issues  Capacity building of farmers on ground- water recharge and micro irrigation	Enhanced crop and animal productivity Improved liveli- hoods
Farmers and community	Time and money	4 Watershed Development Committee formation	Capacity building of farmers on water conservation and groundwater recharge  Reduced mismanagement and over-exploitation of natural resources	Increase in crop yield Improvement in livestock Social cohesion

## Rajasthan

Stakeholders	Input	Output	Outcome	Impact
Farmers and community	Time and Money	Construction of 849 rainwater harvesting tanks, construction of 40 recharge wells, construction of 1 Pond, integrated farming system - 780 hectares increased to 14,489 hectares due to replication of IFS model, plantation of 95,936 plants, set up 425 fruit orchards, Kund Baghwani -808 seeds packets distributed to wage labourers/BPL families	Availability of clean drinking water for HHs (rainwater harvesting tanks)It is also used for cooking, animals, clothes and dishes, and kitchen garden  Availability of water for irrigation  Conservation and disposal of runoff water  Saving on agricultural inputs	Increase in water table -690 lakh metric cube water harvested over 3 years  -Increase in yield and farm income, average Rs 35,000 increase in income in two acres per farmer  Improved health-Prevention and reduced risk of water borne diseases (dental fluorosis, typhoid, skeletal fluorosis, joint pains etc)

Stakeholders	Input	Output	Outcome	Impact
Farmers and community	Time and Money		Plantation on community land -neem, peach, local plants as per climate conditions -85-90% plants survived.	Environmental benefits (Reduc- tion in GHG emissions due to orchards, Inte- grated farming system and Kund Baghwani)
Households	Time and money	439 toilet blocks construction	Improved sanitation and hygiene practices, privacy, safety, convenience, reduced diseases  Cost saving on doctor's consultation, medicines and transportation cost	Savings on health treatments Improved health Clean environment
Farmers	Time	588 Agriculture, water awareness, animal husbandry and social aware- ness trainings	Awareness about water conservation, micro irrigation, livestock, and social issues  Capacity building of farmers on groundwater recharge and integrated farming system	Enhanced crop and animal productivity Improvement in livestock Improved liveli- hoods
Farmers and community	Time and money	Formed 1 Village Development Committee (11 members)	Capacity building of farmers on water conservation and groundwater recharge  Reduced mismanagement and over-exploitation of natural resources	Increase in crop yield  Social cohesion  Redressal of farmers problems regarding loans, market linkages, seeds etc.

## **Tamil Nadu**

Stakeholders	Input	Output	Outcome	Impact
Farmers and community	Time and Money	Total water structures constructed by DBF is 176  Village ponds  Farm ponds  Check dam  Rooftop rainwater harvesting  Borewell recharge shaft	Increased availability of irrigation water  Change in cropping pattern  Increase in crop area  Water storage, control run off, and accelerate recharging  Improved livelihood avenues	Total water harvested/re- charged 97.16 Lakh KL  Water saving due to use of sprin- klers  Increase in farm income by 20%  Income from vermicompost  Income from fruits and vegetables  Improved quality of life
Farmers	Time	Trainings on use of water structures, maintenance, and operations	Capacity building on water conservation, micro irrigation, livestock, and social issues  Capacity building of farmers on use of RRWHS and water recharging	Enhanced crop and animal productivity Improved liveli- hoods
Farmers and community	Time and money	2 Village Development Committee formation	Increased awareness about water conser- vation, water recharge and mainte- nance of water structures	Increase in crop productivity  Support for loans, market linkages and agricultural inputs  Social cohesion

## **Uttar Pradesh**

Stakeholders	Input	Output	Outcome	Impact
Farmers and community	Time and Money	Total water structures constructed by DBF is 5076 Village ponds	Improved availability of water for irrigation  Conservation and disposal of runoff water	Groundwater recharge - 92 Lakh KL water harvested through 5076 structures
		Borewell recharge structures  Rooftop rainwater harvesting  Borewell recharge shafts  Micro-irrigation  Trash mulching  Vermicompost pits  Chestnut cultivation  Pisciculture	Saving of fuel (diesel)- Increase in groundwater table reduced costs of pumping which led to reduced fuel cost  Reduction in diseases - Malaria etc.  Dairy development	Availability of safe drinking water for HHs, improved health of beneficiaries  Increased crop productivity and farm income (average increase Rs 27,000 per farmer in 2 acres per season)
Farmers	Time and money	2515 Vermicom- posting pits	Alternate source of livelihood for HHs	Income of Rs 5,53,30,000 from vermicompost in 3 years
Farmers	Time and money	Pisciculture – 3 ponds	Alternate source of livelihood for HHs	Income from sale of fishes is Rs 42,50,000
Farmers	Time and money	24 HHs engaged in Water chestnut cultivation	Alternate source of livelihood for HHs	Income from sale of water chest- nuts is Rs 10,44,660



#### **Stage 3: Evidencing Outcomes and Giving them a Value**

This stage focuses on proxy attachment to the outcomes. A financial proxy for each identified outcome was established for each activity/stakeholder. This process is referred to as "monetising" or adding financial value to the social outcomes. This stage has focused on identifying indicators for the initiative, mentioning the source of data collection and tenure of outcomes for beneficiaries. At this stage, outcome indicators were used to collect evidence of the outcome and assess their relative importance by valuing them. For instance, for the outcome, "groundwater recharge" through check dams, borewell recharge structures and ponds, the proxy was increased crop productivity which led to an increase in income of farmers. For another outcome, "capacity building of farmers on water conservation, use and maintenance of water structures" was monetised with cost of a government training program to learn the benefits. Proxies like income of farmers, improved health, reduction in fuel use, saving on agricultural inputs, cost of training programmes, doctor's consultation fees, transportation cost, etc. were used in the SROI calculation.

Outcomes were monetised for Soil and Water Conservation initiatives in all four locations. The location wise proxy details are mentioned below.

#### **Andhra Pradesh**

Stakeholders	Outcome	Indicator	Data Collection	Proxy
Farmers and community	208 water structures	Increase in crop yield	Beneficiary and DBF	Increased income of farmers and
	Access to loans - Livelihood support - loans/lending support	Amount of fuel saved		Annual average increase in income of farmers -Rs 15,000
	Change in cropping pattern  – Monocropping to multicropping (Cotton to black			Cost of fuel saved-Rs 9,000 per season in 2 acres
	gram and chilly) Reduced agriculture input cost			Income from selling milk-Rs 12,000 per year from Dairy
	Water saving due to use of sprin-klers			
	Increased crop- ping area due to availability of water			

Stakeholders	Outcome	Indicator	Data Collection	Proxy
Farmers and community	Water storage, control run off, and accelerate recharging  Dairy development in the Initiatives area			
Farmers	Trainings conducted for farmers  Awareness about water conserva- tion, micro irrigation, livestock and Agriculture  Capacity building of farmers on borewell recharge and water recharging	Capacity building of farmers	Beneficiary and DBF	Cost of a government training program  http://rkvy.nic.in-/stat-ic/schemes/Train-ing-Farm-ers-and-Farm-ers-groups.html  https://circ.ic-ar.gov.in/training-programforfarm-ers.php
Farmers and community	6 Village Development Committee formation  Capacity building of farmers on water conservation and groundwater recharge  Reduced mismanagement and over-exploitation of natural resources	Capacity building	Beneficiary and DBF	Cost of a government training program  http://rkvy.nic.in-/stat-ic/schemes/Train-ing-Farm-ers-and-Farm-ers-groups.html  https://circ.ic-ar.gov.in/training-programforfarm-ers.php

## Rajasthan

Stakeholders	Outcome	Indicator	Data Collection	Proxy
Farmers and community	Construction of 849 water structures  Availability of clean drinking water for HHs (rainwater harvesting tanks)It is also used for cooking, animals, clothes and dishes, and kitchen garden  Availability of water for irrigation  Conservation and disposal of runoff water  Saving on agricultural inputs  Plantation on community land -neem, peach, local plants as per climate conditions - 85-90% plants survived	Increase in crop productivity	Beneficiary and DBF	Income enhancement of farmers -Rs 35,000 is the annual net disposable income of farmers Saving on vegetables- Rs 9,000 per farmer annually
Households	439 toilet blocks construction Improved sanitation and hygiene practices, privacy, safety, convenience, reduced diseases	Improved health	Beneficiary and DBF	Savings on health treatments – average Rs 3,984 per person expenditure on health annually

Stakeholders	Outcome	Indicator	Data Collection	Proxy
	Cost saving on doctor's consul- tation, medicines and transporta- tion cost			
Farmers	588 awareness trainings  Awareness about water conservation, micro irrigation, livestock, etc.,  Capacity building of farmers on rainwater harvesting tanks and water recharging	Capacity building	Beneficiary and DBF	Fee of a government training programme  https://rkvy.nic.in-/stat-ic/schemes/Train-ing-Farm-ers-and-Farm-ers-groups.html  https://circ.ic-ar.gov.in/training-programforfarm-ers.php
Farmers	Formed 1 Village Development Committee (11 members)  Capacity building of farmers on water conserva- tion and ground- water recharge  Reduced mismanagement and over-ex- ploitation of natural resources	Capacity building	Beneficiary and DBF	Cost of a government training program  http://rkvy.nic.in-/stat-ic/schemes/Train-ing-Farm-ers-and-Farm-ers-groups.html  https://circ.ic-ar.gov.in/training-programforfarm-ers.php

## **Tamil Nadu**

Stakeholders	Outcome	Indicator	Data Collection	Proxy
Farmers and community	Total water harvested/re- charged 97.16 Lakh KL and total water structures were 176 Alternate source of income for HHs Capacity building of farmers	Improved crop productivity Income from sale of vermicompost Improved understanding of agricultural practices and water resources	Beneficiary and DBF	Average increase in income was Rs 20,000 <sup>7</sup> for both the locations (Ariyalur and Dalmiapuram)  10 HHs income from selling vermicompost-Rs 2,00,000 annually  Cost of a training program on agriculture, water and livestock is Rs 6,566
Farmers	2 VDC formation Capacity building of farmers, access to infor- mation on soil and water conservation, and sustainable agricultural practices.	Cost of a training program to build capacity of farmers on water management, farm machinery, seed and vegetable cultivation	Beneficiary and DBF	Cost of a training program  https://rkvy.nic.in-/stat-ic/schemes/Train-ing-Farm-ers-and-Farm-ers-groups.html
Farmers	3 farmer groups - Increased aware- ness about water conservation, water recharge and maintenance of water struc- tures	Increased aware- ness about groundwater recharge	Beneficiary and DBF	Cost of a training program  https://rkvy.nic.in-/stat-ic/schemes/Train-ing-Farm-ers-and-Farm-ers-groups.html

<sup>7.</sup> Data provided by community

#### **Uttar Pradesh**

Stakeholders	Outcome	Indicator	Data Collection	Proxy
Farmers	92 Lakh KL water harvested through 5076 structures. Increase in income of farmers due to Initiatives activities  Improved health - Providing good quality water to people	Productivity enhancement of crops  Improved health and reduced water borne diseases	Beneficiary and DBF	20% increase in farm income. Average net disposable income of farmers is Rs 27,000 annually Rs 10,500 is the treatment cost of diseases due to use of contaminated drinking water
Farmers	Increase in no of animals and better livestock healthcare facilities	Increase in income from the sale of milk	Beneficiary and DBF	Income from milk- Rs 10,000 increase in income from selling milk
Farmers	Additional source of income for HHs	Vermicompost, pisciculture and water chestnut cultivation	Beneficiary and DBF	Income from sale of fishes (3 ponds) – Rs 42,50,000  Income from sale of vermicompost (2515 HHs) -Rs 5,53,30,000  Income from sale of water chestnuts (24 HHs) – Rs 10,44,660

#### **Stage 4: Establishing Impact**

There is a change in groundwater table, agricultural practices, improved health of community due to safe drinking water, and livestock improvement in villages due to DBF's initiatives since 2013. It is also observed that government policies, government organisations, companies, community awareness, and change in the mindset of people were also responsible for the change in the region. After monetising on the outcomes, discounting factors were added to total outcomes to avoid the risk of over-claiming. NABARD, Agriculture, Livestock, and Horticulture Department played a key role in the development process, therefore, their contribution including community contribution was subtracted from the total outcome value.

Discounting factors are those aspects of change that have happened without the DBF intervention or occur as a result of other people and organisations. These changes that have happened on their own were eliminated from the total outcome value. It helped in measuring and accounting for only those changes which occurred due to DBF activities and thus, helped to understand the real impact of the initiatives.

The following four stages were involved in establishing impact.

#### Deadweight

Deadweight is that part of the change that would have happened anyway without the DBF intervention or would have happened in due course of time due to awareness and development in the region.

Deadweight for four locations is mentioned below.

State	Deadweight
Andhra Pradesh	15-40% of the deadweight is given to outcomes such as improved crop productivity, farm income, and increase in income from sale of milk due to government policies, increased per capita income and exposure to farmers regarding modern agricultural practices.
Rajasthan	10-40% of the deadweight is provided to crop productivity, increased farm income, environmental benefits, and farmers training. There is a development in Initiatives areas due to government policies, farmers awareness about water conservation and development in the neighbouring areas.
Tamil Nadu	10-20% of the deadweight to increased crop productivity and farm income and capacity building of farmers as there is an exposure in villages due to government policies and development in the region.
Uttar Pradesh	15-30% of the deadweight is given to income sources such as milk production, pisciculture, vermicompost, and water chestnuts. Project villages present promising opportunities for dairy farming and water chestnut cultivation. Some farmers already engaged in these activities prior to the implementation of the DBF initiative.

#### Displacement

This is another component that was considered while determining the impact of the initiatives in four locations. It is an assessment of how much of the outcome displaced other outcomes. They may be of the DBF's programmes, other companies, and government initiatives. As per discussions with stakeholders, no such outcome has been identified for Soil and Water Conservation initiatives in Andhra Pradesh, Rajasthan, Tamil Nadu and Uttar Pradesh.

#### **Attribution**

Attribution was considered while calculating the social value of the Soil and Water Conservation initiatives of DBF. Attribution showed how much of the outcome was also a result of the contribution of other organisations. E.g., NABARD, Agriculture, Horticulture, Irrigation and Livestock Departments. These organisations have provided technical and financial support and granted approval to DBF to commence the project activities in the villages. Consequently, they hold a significant interest in the outcomes of the initiatives.

Location wise attribution values are given below:

State	Attribution
Andhra Pradesh	25-90% of the attribution to Irrigation Department for approval, NABARD for contributing Rs 31 lakh and Dairy component of NABARD. Government departments build capacity of farmers on modern agricultural practices and water conservation.
Rajasthan	10-25% attribution to Irrigation Department for conducting awareness sessions for farmers on seeds, fertilisers and micro irrigation, panchayat for facilitation of benefits of government schemes and ASHA workers for raising awareness about consumption of safe drinking water.
Tamil Nadu	5-72% of the attribution to NABARD for contributing Rs 17.24 lakh and providing technical support. Panchayat, Agriculture, and Irrigation Department for providing approval for water structures construction and capacity building of farmers on efficient utilisation of water and promoting vermicompost and vegetable cultivation.
Uttar Pradesh	10-60% of the attribution value is allocated to the Irrigation Department and Panchayat for promoting awareness regarding efficient water utilisation. Given that sugarcane cultivation is highly water-intensive and contributes to the depletion of water tables due to overexploitation of water resources in project areas. The Livestock Department conducts awareness sessions on animal feed, treatment, and upkeep, leading to a significant reduction in cattle mortality within the initiative areas. Moreover, Panchayat and ASHA workers raise awareness about the importance of safe drinking water.

#### Drop-off

Drop-off implied how long the impact of the initiatives would last in the years to come. As per discussion with beneficiaries, it was concluded that some outcomes would last for 3 to 5 years, and some would last for a lifetime. DBF has constructed water structures such as check dams, borewell recharge structures, check dam causeways, rooftop rainwater structures and provided sprinklers. These structures would last for 5-20 years depending upon operation and maintenance of these structures. Initiative beneficiaries will remember most of the training programmes but may forget some due to new programmes or DBF's exit from the initiative villages. In future years, the outcomes may decrease or increase depending on several factors such as new activities.

Drop-off is usually calculated by deducting a certain percentage from the remaining level of the outcome at the end of each year. It is usually seen that the drop-off value of any initiative increases as years pass and it is mainly used in prospective studies. It does not affect the outcome score in the retrospective studies.

State	Drop-off
Andhra Pradesh	25-100% of drop-off value to water structures as these would require operation, maintenance, and desilting time to time to keep them in the functioning stage. The value of water structures would depreciate every year. It would be difficult to sustain the operations in the absence of DBF. As it is financed by NABARD, the outcomes would be impacted in future if DBF does not support the initiatives. Farmers may forget the learnings of the trainings, if DBF does not continue the project activities. However, Panchayat and Agriculture dept. organise training sessions for farmers time to time.
Rajasthan	30-70% of drop-off to capital investments done by the company on water structures. The initiative outcomes would suffer severely in absence of operations and maintenance (O&M) and high depreciation cost of structures. In terms of toilet construction activity, toilet blocks need O&M regularly, HHs need to maintain them regularly otherwise they may become defunct. VDC may disintegrate in future without DBF's support.
Tamil Nadu	20-70% of the drop-off value is attributed to the groundwater recharge outcome, as without DBF intervention, groundwater recharge could be significantly affected, potentially impacting crop yields and farm income, especially considering the limited support provided by the government. DBF plays a crucial role in promoting vegetable cultivation, and the absence of its support may lead to difficulties due to a shortage of irrigation water. Additionally, without DBF, Village Development Committees (VDCs) may dissolve and lose their effectiveness. Furthermore, the value of water structures would depreciate faster in the following years if DBF discontinues its support.
Uttar Pradesh	40-80% of the drop-off is allocated to the outcomes of the initiatives, as the withdrawal of support from DBF in future could significantly hinder groundwater recharge in the region. Also, without these initiatives, there is a risk of water contamination resurfacing due to the declining water table. DBF has promoted the adoption of vermicompost usage among farmers. Without intervention from the organisation, some farmers may stop producing and utilising vermicompost. Additionally, there is a depreciation of water structures in the coming years.  It was noted that only a small number of households were involved in pisciculture within the project areas. In the absence of future initiatives, these households may discontinue this activity due to a lack of motivation and inadequate market linkages. DBF has encouraged farmers to engage in water chestnut cultivation due to its good returns. However, without continued support from DBF in the future, some farmers may abandon this activity due to insufficient motivation and support for market linkages.



#### Stage 5: Calculating the SROI

At this stage, the total monetised outcomes or Social Value Created (SVC) were divided by DBF's investments. Initially, the Social Return on Investment (SROI) ratio was calculated for each individual location, followed by the computation of the overall SROI ratio to determine the total social value generated by the Soil and Water Conservation initiatives across the four locations. The SROI ratio indicates that every rupee invested by DBF generated a social value of approx. eight rupees for the stakeholders. Over the period from 2021 to 2023, DBF invested Rs 9.73 crore in Soil and Water Conservation initiatives, resulting in a social value of Rs 73.64 crore. The calculated SROI value stands at 7.56.

The location wise SVC and investment details are mentioned below.

State	Social Value Calculated (SVC) - In Rs	Investment - In Rs	SROI
Andhra Pradesh	1,29,44,144	21,19,073	6.11
Rajasthan	37,31,93,858	4,46,34,895	8.36
Tamil Nadu	6,39,84,812	1,12,00,205	5.71
Uttar Pradesh	28,62,79,899	3,94,25,497	7.26
Overall Total	73,64,02,714	9,73,79,670	7.56

To arrive at the SROI ratio, the SVC is divided by the total DBF investment.

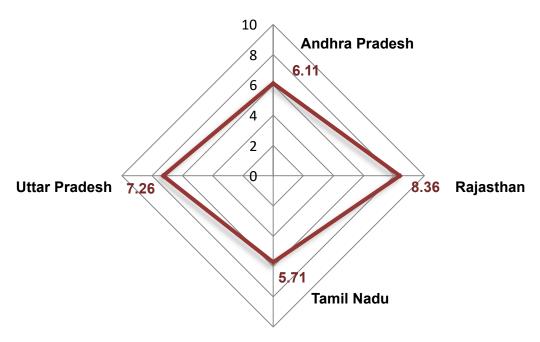
SROI Ratio = Rs 73,64,02,714 (SVC) / 9,73,79,670 (Total DBF investment)

SROI Ratio 1:7.56 or 1:8

The ratio implies that DBF's spending of one rupee generated a social value of 7.56 rupees for beneficiaries. Rajasthan has the highest social value of 8.36 followed by Uttar Pradesh 7.26, Andhra Pradesh has a social value of 6.11 and Tamil Nadu has lowest SROI value of 5.71.

The highest SROI value of 8.36 in Rajasthan can be attributed to an effective project implementation approach, diversified project activities and outcomes, community participation, and stakeholder engagement. In Tamil Nadu, the lowest SROI value of 5.71 is linked to limited project activities and outcomes and a lack of community involvement in Ariyalur, contrasting with the robust participation observed in Dalmiapuram. Additionally, community mobilisation efforts were deemed insufficient, leading to dissatisfaction among the community regarding water quality.



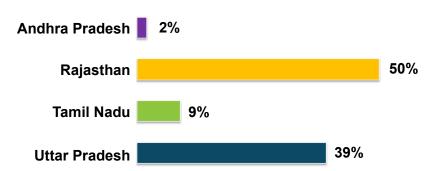


In Uttar Pradesh, which has the second highest SROI value of 7.26, stakeholder satisfaction, community engagement, and **multiple livelihood opportunities** (pisciculture, vermicomposting and water chestnut cultivation) were highlighted as key success factors. However, there was a lack of appreciation for soak pits due to a limited understanding of their importance and their functionality being confined to the rainy season. Households expressed the need for more borewell pumps, trash mulchers, and greater awareness of government schemes, including those related to solar pumps. Farmers emphasised the necessity for increased water availability and access to equipment for water extraction. Additionally, women expressed a desire to participate in training and awareness sessions.

In Andhra Pradesh, the SROI value of 6.11 is attributed to a few project activities and limited opportunities for income generation for beneficiaries. DBF may engage more farmers, diversify project activities, capture indirect project outcomes, and increase the project investments in Kadapa to enhance the overall impact of the initiative.

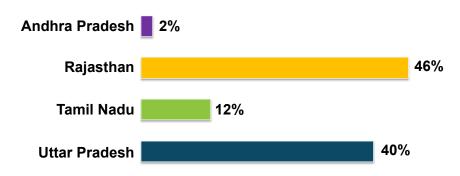
The graph mentioned below shows that **Rajasthan and Uttar Pradesh have SVC of 50% and 39%** respectively followed by Tamil Nadu 9% and Andhra Pradesh has the lowest 2% SVC.



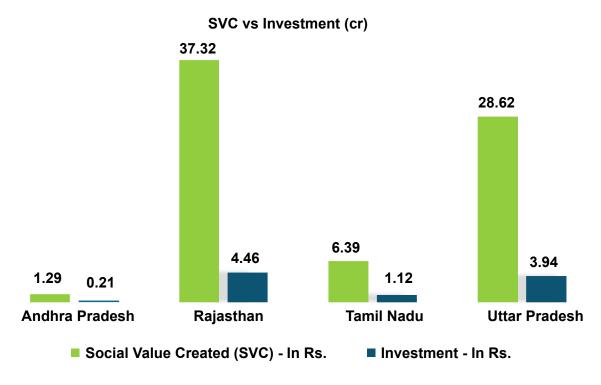


The graphs below show that DBF has made a maximum investment on Rajasthan initiative (46%) and generated the highest SVC of Rs 37.32 crore, followed by Uttar Pradesh (40%) and SVC of Rs 28.62 crore, Tamil Nadu (12%) and SVC of Rs 6.39 crore and Andhra Pradesh (2%) with the SVC of Rs 1.29 crore.





It is to be noted that there is no direct correlation between the amount of investment in initiatives and the social value created. Even initiatives with relatively low investment can yield high social value. Social value is dependent upon factors such as community engagement, partnerships, diversification of project activities and the effective implementation of initiatives.



DBF planted 95,936 saplings and established 425 fruit orchards in Chirawa, Rajasthan. However, the plantation activity in this region did not generate income, as the plants were still small and did not yield any financial returns, according to project beneficiaries and DBF representatives. Although the SROI study is retrospective in nature, it is possible to monetize prospective outcomes like these if income from the trees becomes available in the forthcoming years.



#### Stage 6: Reporting, Using, and Embedding

DBF may share the insights from the SROI study to both internal and external stakeholders. The knowledge gained from the study can be leveraged to refine processes and maximize impacts. These findings will enable DBF to reassess its initiatives and strategise for future activities. The report may be assured on SROI principles and data for credibility.

#### **WAY FORWARD**

The SROI value is calculated based on data provided by DBF location-wise. It was noted that the data was detailed, with numerous outcomes mentioned for some locations, while only a few outcomes were provided for others. The limited outcomes provided by DBF may have impacted the SROI scores of different project locations. To enhance the project outcomes, the following mentioned recommendations may be implemented by DBF.

- There is a need to broaden the scope of project activities in Andhra Pradesh and Tamil Nadu with the aim of enhancing project efficiency and social values. Engaging a greater number of farmers across the four locations in activities such as micro-irrigation, borewell recharge, and rooftop rainwater harvesting can substantially contribute to this objective. Such diversification can significantly enhance the overall project outcomes and social value.
- DBF may enhance awareness sessions for farmers in Uttar Pradesh regarding availing benefits of government schemes, modern agricultural practices, water conservation techniques, and the operation and maintenance of water structures like check dams and borewell recharge systems. This effort can increase farmers' understanding of modern and sustainable agricultural practices, consequently leading to increased crop yields and farm income.
- In Andhra Pradesh and Rajasthan, plantation activities need to be implemented in a strategic manner (such as citrus trees plantation, orchards, integrated farming system). This strategic approach may enable DBF to gain a clear understanding of the outcomes generated by these activities. Moreover, it enhances the social value of the initiatives over time. By carefully planning and executing these plantation activities, DBF can not only achieve its immediate objectives but also ensure long-term sustainability and positive impact on the community and environment. This strategic approach maximises the benefits derived from the initiatives and strengthens their overall contribution to the welfare of society and the environment.
- Overall, the organisation may track and document indirect outcomes of the initiatives along with the direct outcomes. Tracking outcomes on a location-specific basis is crucial for gaining a comprehensive understanding of the benefits accruing to people over time. This systematic tracking allows for the assessment of how the initiatives have impacted various aspects of people's lives, including but not limited to water availability, health improvements, income enhancement, and the effectiveness of irrigation and water recharge systems. It will help to enhance the overall social value of soil and water conservation initiatives in four project locations.



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